Postpartum Hemorrhage (PPH)

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September 23, 2011

Learning Goals for PPH

- **Recognize risk factors and etiologies of PPH**
- **Outline active 3rd stage management**
- **Recognize PE s/s postpartum hemorrhage**
- **Perform initial maneuvers in response suspected PPH**
- **Appropriately choose and use pharmacologic agents for PPH**
- **Recognize when pharmacologic agents are not adequate treatment and what to do next, including appropriate communication re: consultation**

PPH Definitions

- Vaginal delivery > 500 cc
  - Unclear what EBL actually is after normal VD
  - PPH = bleeding >normal in “eyes of the beholder”
- C/S > 1000 cc
- Amount requiring transfusion
- 10% reduction in Hct
- Symptomatic blood loss
- Primary—within 1st 24 hrs
- Secondary—after 24 hrs (delayed PPH)

Estimation of Blood Loss

- Comparison to known quantities
  - 12 oz Diet Coke = 350 cc
  - 20 oz Venti Starbucks = 500 cc
  - ½ gallon of milk = 1900 cc
- Adding measurement tools on L+D
  - Standardize weighing of pads
  - Using graduated collection containers
  - Posting visual aids as reminders
    - % soaked lap pads>translate to specific ccs

Clinical Classification of Blood Loss

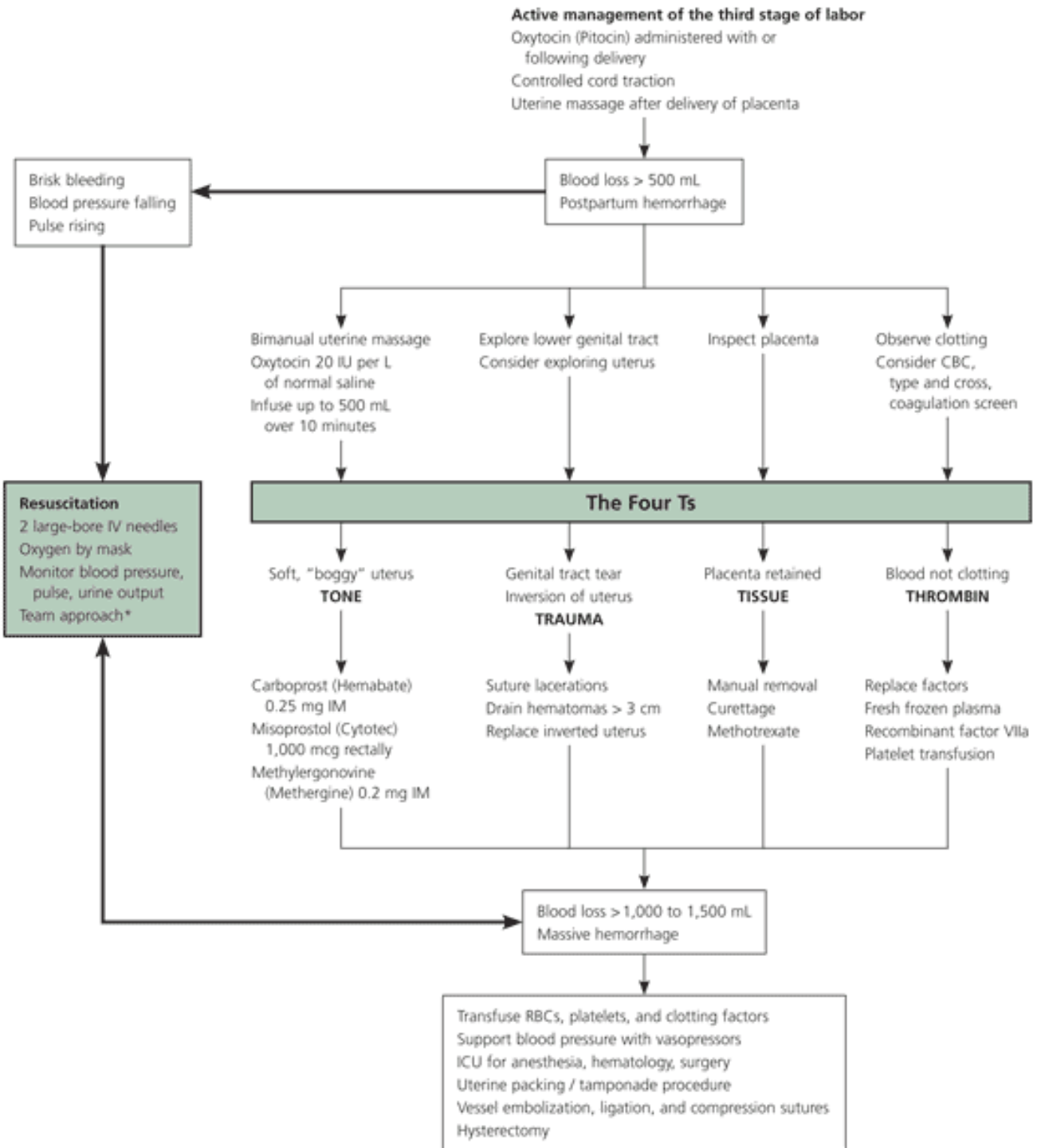
- Class I—EBL up to 1 L no VS changes
- Class II—EBL 1-1.5 L (mild shock)
  - Slightly low BP and HR elevation
- Class III—EBL 1.5-2L (mod shock)
  - SBP 70-80, tachy, pallor, restlessness
- Class IV—EBL >2 L (severe shock)
  - SBP 50-60, more tachy, dyspnea,collapse
- Use of VS as “triggers” for rapid response

Risk Factors for PPH

- Anything that makes the uterus bigger or tired
  - Multiple gestation, polyhydramnios, LGA fetus, >4 prior births, fibroids, prolonged 2nd stage, MgSO4, chorioamnionitis, augmentation, precipitous labor
- Previous or evolving hematologic abnormalities
  - Hct<28, plts < 100, bleeding d/o, +AB screen
- Placental problems
  - Low lying, previa, abruption, retained, acreta,etc
- Prior or current c/s (esp c/GA), episiotomy
- Use of RF to stratify pts prior to delivery
  - Need to be prepared for PPH in any delivery (18>3%)

Active Management of 3rd Stage

- Cochrane Meta Analysis
  - 62% fewer PPH in Active vs. Expectant 3rd stage management groups
- Components of Active Management
  - Oxytocin 10 units IV/IM with delivery of infant or placenta (reduces PPH by 40%)
  - Controlled cord traction
  - Cord clamping c/in 2 mins
  - Fundal massage after delivery of placenta
- Need for hospital-wide guidelines


Active management of the third stage of labor
Oxytocin (Pitocin) administered with or following delivery
Controlled cord traction
Uterine massage after delivery of placenta
Blood loss > 500 mL
Postpartum hemorrhage
Brisk bleeding
Blood pressure falling
Pulse rising
Bimanual uterine massage
Oxytocin 20 IU per L of normal saline
Infuse up to 500 mL over 10 minutes
Explore lower genital tract
Consider exploring uterus
Inspect placenta
Observe clotting
Consider CBC, type and cross, coagulation screen
Resuscitation
2 large-bore IV needles
Oxygen by mask
Monitor blood pressure, pulse, urine output
Team approach*
The Four Ts
Soft, "boggy" uterus
TONE
Genital tract tear
Inversion of uterus
TRAUMA
Placenta retained
TISSUE
Blood not clotting
THROMBIN
Carboprost (Hemabate) 0.25 mg IM
Misoprostol (Cytotec) 1,000 mcg rectally
Methylergonovine (Methergine) 0.2 mg IM
Suture lacerations
Drain hematomas > 3 cm
Replace inverted uterus
Manual removal
Curettage
Methotrexate
Replace factors
Fresh frozen plasma
Recombinant factor VIIa
Platelet transfusion
Blood loss > 1,000 to 1,500 mL
Massive hemorrhage
Transfuse RBCs, platelets, and clotting factors
Support blood pressure with vasopressors
ICU for anesthesia, hematology, surgery
Uterine packing / tamponade procedure
Vessel embolization, ligation, and compression sutures
Hysterectomy

Uterotonic Agents

- Pitocin 20-80 units in 1L chrystalloid
  - Hypotension c/IV bolus of med alone
- Ergot--Methergine 0.2 mg IM
  - Contraindicated c/Htn; SEs: N/V
- Prostaglandins
  - Carboprost (Hemabate) 250 mcg/1 amp IM-max 2 mg
    - Contraindicated in asthma; max dose 2 mg
  - Misoprostol (Cytotec) 800-1000 mcg PR/other routes
  - SEs: elevated temp, N/V, diarrhea, flushing, tachycardia, shaking, BP changes

“Move Up/Move On”

- If no response to one med, move on
  - Be sure bladder emptied
- IV pitocin>methergine>prostaglandin
  - No clear benefit to 2 prostaglandins as mechanism of action same
  - Concurrently increase IV access and order T+S, O2
- If atony not responding to any med, move on to non-pharmacologic rx
  - T+C RBC and request FFP/plts/cryo, DIC screen
  - Intrauterine balloon (Bakri)
  - Special sutures at time of c/section (B Lynch)
  - D+C>hysterectomy (Uterine artery embolization?)

When to Consult

- When atony is not quickly responding to 1-2 agents
- When picture is mixed or etiology uncertain
- When technical assistance is needed for further assessment or treatment
- Prior to patient becoming unstable
  - Value of “head’s up” if moving in that direction

Summarize for Consultant

- Any risk factors for PPH
- How long since placental delivery
  - Placenta intact?
  - Lacerations?
- What you have tried so far
- Pt's VS/any sxs
- Anesthesia/IV status
- What has been ordered

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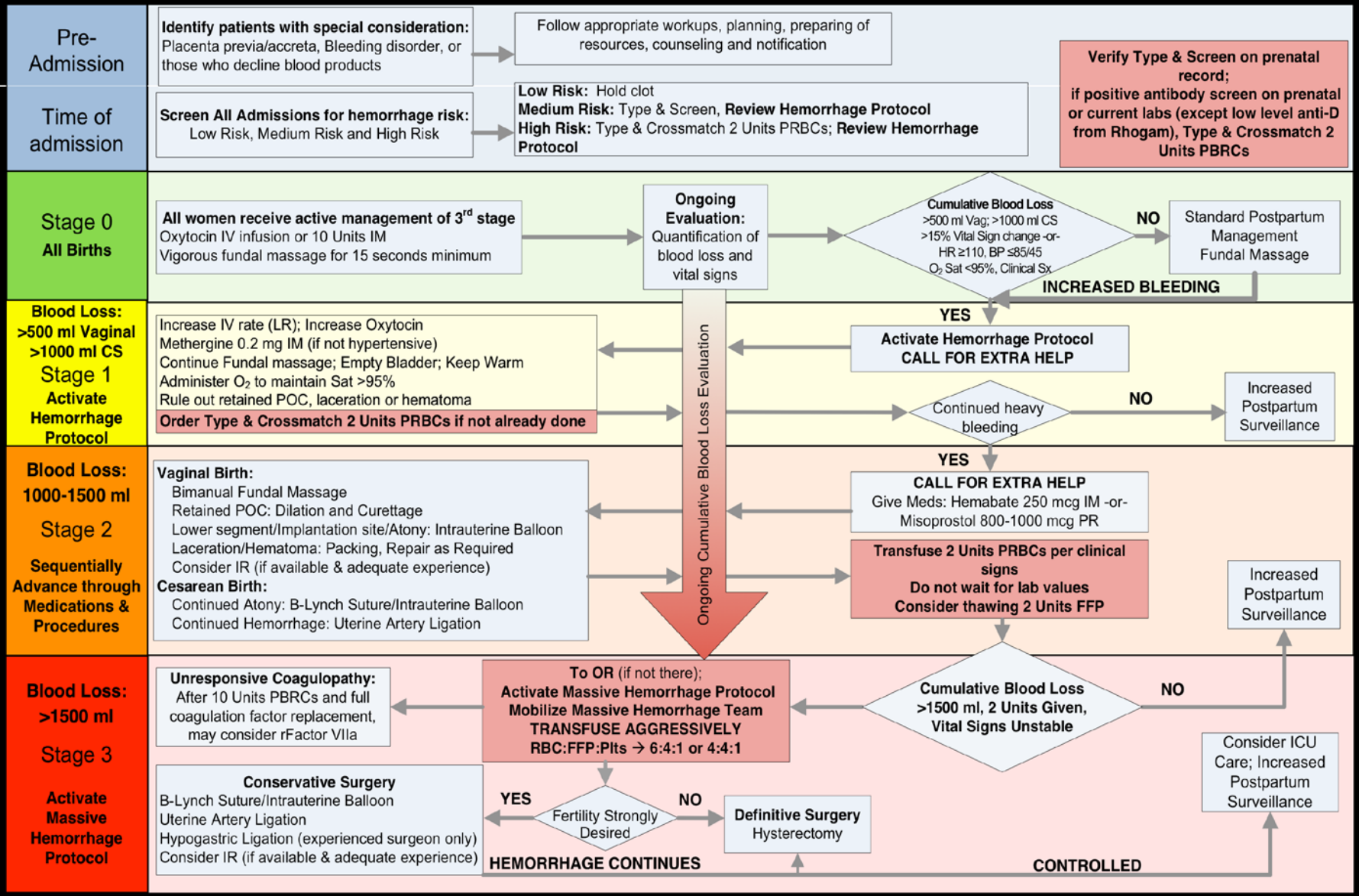

Initiatives at UMass for Improved Response to PPH

- Improved nursing education re: active management of the 3rd stage
- Do not need written order for any PPH med in PYXIS (can overide all)
- PPH cart for post partum areas
- Massive hemorrhage protocol

Importance of Drills/Simulation

"Medicine is the last high-risk industry that expects people to perform perfectly in complex, rare emergencies but does not support them with high-quality training and practice throughout their careers"

-Paul Preston, MD